Amendments to the Claims

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

Claims 1-19 (CANCELED)

20. (CURRENTLY AMENDED) A non-thermal method for treating and/or curing cardiac arrhythmias comprising the steps of:

utilizing a device according to any one of a first through seventh device ~~claims 1, 3, 7, 8, 12, 16 or 17~~ to destroy tissues and pathways from which abnormal signals arise and/or in other cardiac tissues such that abnormal electrical rhythms cannot be generated and/or sustained~~; and, whereby~~

using MR imaging ~~is used~~ to guide the device and assist in monitoring the progress of the photochemotherapy or photodynamic therapy, wherein

the first device is a non-thermal device including an illumination mechanism and an MRI receiver,

the second device is photochemotherapy or photodynamic therapy device for the ablation of the pulmonary vein ostia including an illumination mechanism and an MRI receiver,

the third device is a device for the treatment and/or cure of cardiac arrhythmias that includes a catheter having a balloon or reservoir at or near its distal end, a light source located within the balloon or reservoir, and an MRI receiver, whereby a photosensitizing agent is perfused into and delivered by the balloon to a desired treatment site and whereby light capable of activating the photosensitizing agent is delivered by the light source through the balloon and to the desired treatment site,

the fourth device is a photochemotherapy or photodynamic therapy device that includes a catheter, a balloon at the distal end of the catheter, a fiberoptic laser within the catheter, and an MRI receiver within the catheter, wherein the fiber illuminates an area being treated and wherein the

MRI receiver guides the device and/or assists in monitoring the treatment and/or cure of cardiac arrhythmias,

the fifth device is a device that includes a dual function catheter that combines MR imaging and photochemotherapy or photodynamic therapy,

the sixth device is a device that induces apoptotic cell death of tissues and pathways from which abnormal signals arise and/or in other cardiac tissues such that abnormal electrical rhythms cannot be generated and/or sustained, the device including an illumination mechanism and an MRI receiver, and

the seventh device is a device that uses free radical generation to destroy tissues and pathways from which abnormal signals arise and/or that destroys other cardiac tissues such that abnormal electrical rhythms cannot be generated and/or sustained, the device including an illumination mechanism and an MRI receiver.

21. (PREVIOUSLY PRESENTED) A method for treating and/or curing cardiac arrhythmias using photochemotherapy or photodynamic therapy comprising the steps of:

(a) providing a device comprising an illumination mechanism and an MRI receiver;

(b) administering a photosensitizing agent to a desired treatment site;

(c) inserting the device into the desired treatment site using MRI to guide the device;

(d) delivering laser energy at a wavelength required to activate the photosensitizing agent; and

(e) utilizing MR imaging to assist in monitoring the progress of the photochemotherapy or photodynamic therapy.

22. (PREVIOUSLY PRESENTED) A method to electrically isolate the pulmonary vein from the left atrium comprising the steps of using photochemotherapy or photodynamic therapy to electrically isolate the pulmonary vein from the left atrium under the guidance of MR imaging.

23. (CURRENTLY AMENDED) A method of ablating at least a section of the pulmonary vein using photochemotherapy or photodynamic therapy, comprising the steps ~~of:~~ of

_____using a device according to any one of ~~claims 1, 3, 7, 8, 12, 16 or 17~~ a first through seventh device to ablate at least a section of the pulmonary vein and

_____using MR imaging to monitor the progress of the ablation, wherein

_____the first device is a non-thermal device including an illumination mechanism and an MRI receiver,

_____the second device is photochemotherapy or photodynamic therapy device for the ablation of the pulmonary vein ostia including an illumination mechanism and an MRI receiver,

_____the third device is a device for the treatment and/or cure of cardiac arrhythmias that includes a catheter having a balloon or reservoir at or near its distal end, a light source located within the balloon or reservoir, and an MRI receiver, whereby a photosensitizing agent is perfused into and delivered by the balloon to a desired treatment site and whereby light capable of activating the photosensitizing agent is delivered by the light source through the balloon and to the desired treatment site,

_____the fourth device is a photochemotherapy or photodynamic therapy device that includes a catheter, a balloon at the distal end of the catheter, a fiberoptic laser within the catheter, and an MRI receiver within the catheter, wherein the fiber illuminates an area being treated and wherein the MRI receiver guides the device and/or assists in monitoring the treatment and/or cure of cardiac arrhythmias,

_____the fifth device is a device that includes a dual function catheter that combines MR imaging and photochemotherapy or photodynamic therapy,

_____the sixth device is a device that induces apoptotic cell death of tissues and pathways from which abnormal signals arise and/or in other cardiac tissues such that abnormal electrical rhythms cannot be generated and/or sustained, the device including an illumination mechanism and an MRI receiver, and

_____the seventh device is a device that uses free radical generation to destroy tissues and pathways from which abnormal signals arise and/or that destroys other cardiac tissues such that

abnormal electrical rhythms cannot be generated and/or sustained, the device including an illumination mechanism and an MRI receiver.

24. (PREVIOUSLY PRESENTED) A method to treat and/or cure cardiac arrhythmias comprising using photochemotherapy or photodynamic therapy to destroy tissues and pathways from which abnormal signals arise and/or in other cardiac tissues such that abnormal electrical rhythms can not be generated and/or sustained wherein MR imaging is used to guide and monitor the progress of tissue being destroyed.

25. (PREVIOUSLY PRESENTED) A photodynamic method comprising causing cell death in certain cardiac tissue such that abnormal electrical rhythms can not be generated and/or sustained and using MR imaging to guide and monitor the progress of cell death.

26. (CURRENTLY AMENDED) A method to treat and/or cure cardiac arrhythmias comprising the steps of:

providing a device according to any one of a first through seventh device;

using the provided device ~~of any one of claims 1, 3, 7, 8, 12, 16 or 17~~ to destroy tissues and pathways from which abnormal signals arise and/or in other cardiac tissues such that abnormal electrical rhythms cannot be generated and/or sustained, and wherein

the first device is a non-thermal device including an illumination mechanism and an MRI receiver,

the second device is photochemotherapy or photodynamic therapy device for the ablation of the pulmonary vein ostia including an illumination mechanism and an MRI receiver,

the third device is a device for the treatment and/or cure of cardiac arrhythmias that includes a catheter having a balloon or reservoir at or near its distal end, a light source located within the balloon or reservoir, and an MRI receiver, whereby a photosensitizing agent is perfused into and delivered by the balloon to a desired treatment site and whereby light capable of activating the

photosensitizing agent is delivered by the light source through the balloon and to the desired treatment site,

the fourth device is a photochemotherapy or photodynamic therapy device that includes a catheter, a balloon at the distal end of the catheter, a fiberoptic laser within the catheter, and an MRI receiver within the catheter, wherein the fiber illuminates an area being treated and wherein the MRI receiver guides the device and/or assists in monitoring the treatment and/or cure of cardiac arrhythmias,

the fifth device is a device that includes a dual function catheter that combines MR imaging and photochemotherapy or photodynamic therapy,

the sixth device is a device that induces apoptotic cell death of tissues and pathways from which abnormal signals arise and/or in other cardiac tissues such that abnormal electrical rhythms cannot be generated and/or sustained, the device including an illumination mechanism and an MRI receiver, and

the seventh device is a device that uses free radical generation to destroy tissues and pathways from which abnormal signals arise and/or that destroys other cardiac tissues such that abnormal electrical rhythms cannot be generated and/or sustained, the device including an illumination mechanism and an MRI receiver.

27. (PREVIOUSLY PRESENTED) A method to treat and/or cure cardiac arrhythmias using photochemotherapy or photodynamic therapy comprising:

delivering a therapeutically effective amount of a photosensitizing agent to the cardiac tissue, wherein the photosensitizing agent is preferentially absorbed by the tissues and pathways from which abnormal signals causing the arrhythmias arise;

activating the photosensitizing agent with an illumination mechanism; and

using MR imaging to guide and monitor the treatment.

28. (ORIGINAL) The method of claim 27, wherein the step of activating the photosensitizing agent with an illumination mechanism overlaps with the step of delivering a photosensitizing agent to the cardiac tissue.

29. (ORIGINAL) The method of claim 27 wherein the photosensitizing agent is selected from porfimer sodium and phthalocyanines.

30. (CANCELED)

31. (PREVIOUSLY PRESENTED) The method of claim 21 or 27, wherein the photosensitizing agent is delivered to the cardiac tissue systemically.

32. (PREVIOUSLY PRESENTED) The method of claim 21 or 27, wherein the photosensitizing agent is delivered to the cardiac tissue by an angioplasty catheter balloon or reservoir mechanism.

33. (ORIGINAL) The method of claim 32, wherein the angioplasty catheter balloon or reservoir mechanism has one or more discrete pores through which the photosensitizing agent is delivered to the cardiac tissue.

34. (ORIGINAL) The method of claim 33, wherein the one or more pores are positioned for delivery to a desired location in the cardiac tissue.

35. (ORIGINAL) The method of claim 32, wherein at least a portion of the angioplasty catheter balloon or reservoir mechanism is fabricated of a semipermeable membrane through which the agent is delivered to the cardiac tissue.

36. (ORIGINAL) The method of claim 35, wherein the portion(s) of the angioplasty catheter balloon or reservoir mechanism fabricated of the semipermeable membrane is situated to deliver the photosensitizing agent to a desired location of the cardiac tissue.

37. (PREVIOUSLY PRESENTED) The method of claim 21 or 27, wherein the photosensitizing agent is delivered to the cardiac tissue by directly perfusing the photosensitizing agent into the coronary arteries.

38. (PREVIOUSLY PRESENTED) The method of any one of claims 21, 22, 24, 25 or 27, wherein the photochemotherapy or photodynamic therapy utilizes an illumination mechanism and the illumination mechanism comprises a fiberoptic catheter.

39. (ORIGINAL) The method of claim 38, wherein the fiberoptic catheter delivers illumination at a discrete point.

40. (ORIGINAL) The method of claim 38, wherein the fiberoptic catheter delivers illumination in a linear pattern.

41. (ORIGINAL) The method of claim 38, wherein the fiberoptic catheter delivers illumination in an annular/ring shaped pattern.

Claims 42 - 47 (CANCELED)

48. (PREVIOUSLY PRESENTED) The method of any one of claims 21, 22, 24, 25 or 27, further comprising the step of utilizing MR imaging to monitor coagulation on the endocardial surface.

49. (PREVIOUSLY PRESENTED) The method of any one of claims 21, 22, 24, 25 or 27, further comprising the step of utilizing MR imaging to monitor oxygenation levels.

50. (PREVIOUSLY PRESENTED) The method of any one of claims 21, 22, 24, 25 or 27, further comprising the step of utilizing MR imaging to monitor phosphate levels.

Claims 51-57 (CANCELED)

58. (PREVIOUSLY PRESENTED) The method of claim 20, wherein targeted contrast agents specific for apoptosis are used with MR imaging to guide the device and assist in monitoring the progress of the photochemotherapy or photodynamic therapy.

59. (PREVIOUSLY PRESENTED) The method of any one of claims 21, 22 24, 25 or 27, wherein targeted contrast agents specific for apoptosis are used with MR imaging to guide the device and assist in monitoring the progress of the photochemotherapy or photodynamic therapy.

60. (CANCELED)